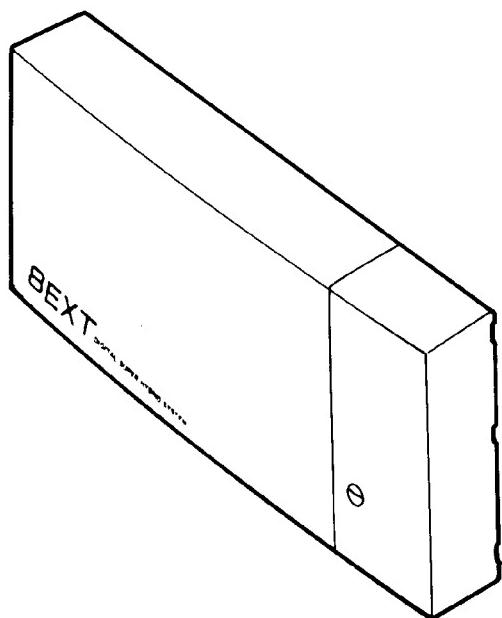


ORDER NO. KM49309616C1

Service Manual

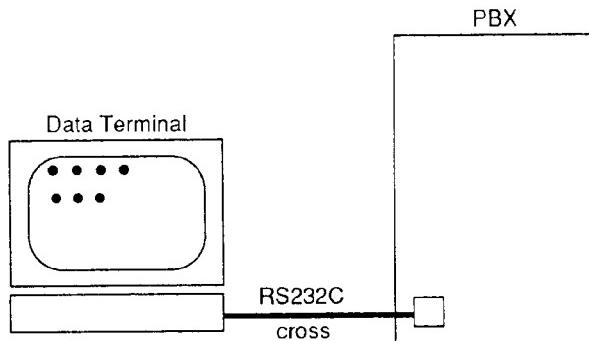
EXTENSION EXPANSION CARD
KX-TD170C



Panasonic

DIAGNOSTIC METHOD

1. HOW TO GET INTO SELF-DIAGNOSTIC MODE



- (1) Set the main power switch to ON. (PBX and Data Terminal)
- (2) Connect the Data Terminal to the RS232C of PBX and press the return key of the Data Terminal in 10 seconds.
- (3) After message is displayed, enter password.

Ex.) Welcome to KX-TD1232 Ver. 2.0 Panasonic CO., LTD
Enter Password
??????↓

- (4) After response message is received, enter diagnostic mode shift command "DAG".

Ex.) EIA Mode Start
DAG↓

- (5) After response message is received, diagnostic command can be used.

Ex.) DIAG Mode Start

* Setting of RS-232C communication parameter

Return Cord: CL+LF
Borate: 9600bps
Data : 8 bit
Parity Bit: None
Stop Bit: 1 bit

2. TEST ITEMS

No.	Test Items	Test Method	Check Items
1	DTMF G/R Test	1) Enter "M1 4,0" from data terminal. 2) Enter "M1 4,1" from data terminal.	1) Make sure response is "OK 00". 2) Make sure response is "OK 00".
2	Extension Card Test [Analogue Channel Loop Back]	1) Enter "M2 4,0" from data terminal. 2) Enter "M2 4,1" from data terminal.	1) Make sure response is "OK 00". 2) Make sure response is "OK 00".
3	Extension Card Test [Digital Channel Loop Back]	1) Enter "M3 4,0" from data terminal. 2) Enter "M3 4,1" from data terminal.	1) Make sure response is "OK 0000". 2) Make sure response is "OK 0000".
4	Extension Card Test [Digital Data Loop Back Test]	1) Enter "M4 4" from data terminal.	1) Make sure response is "OK 00" ..

CIRCUIT OPERATIONS

1. FUNCTION

EXPANSION EXT CARD is an optional card for extending the EXT lines from 16 up to 24 or 32 lines. The differences between this board and the basic one are as follows;

- No diagnostic function for the CO card

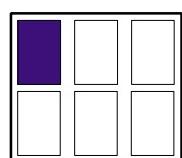
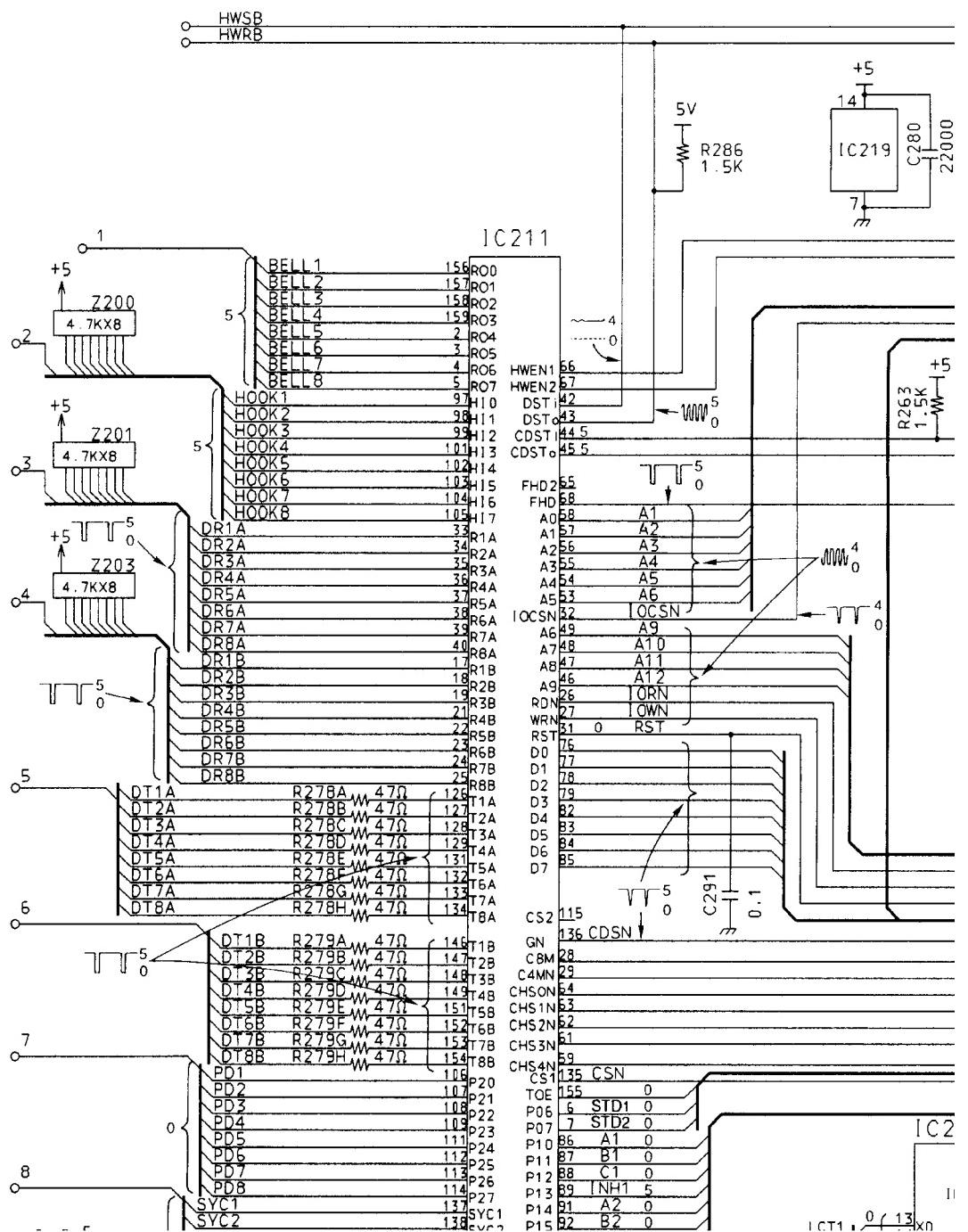
Refer to the Service Manual for KX-TD1232C as for the details of BASIC EXT. BOARD.

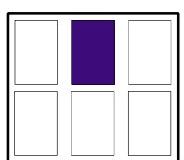
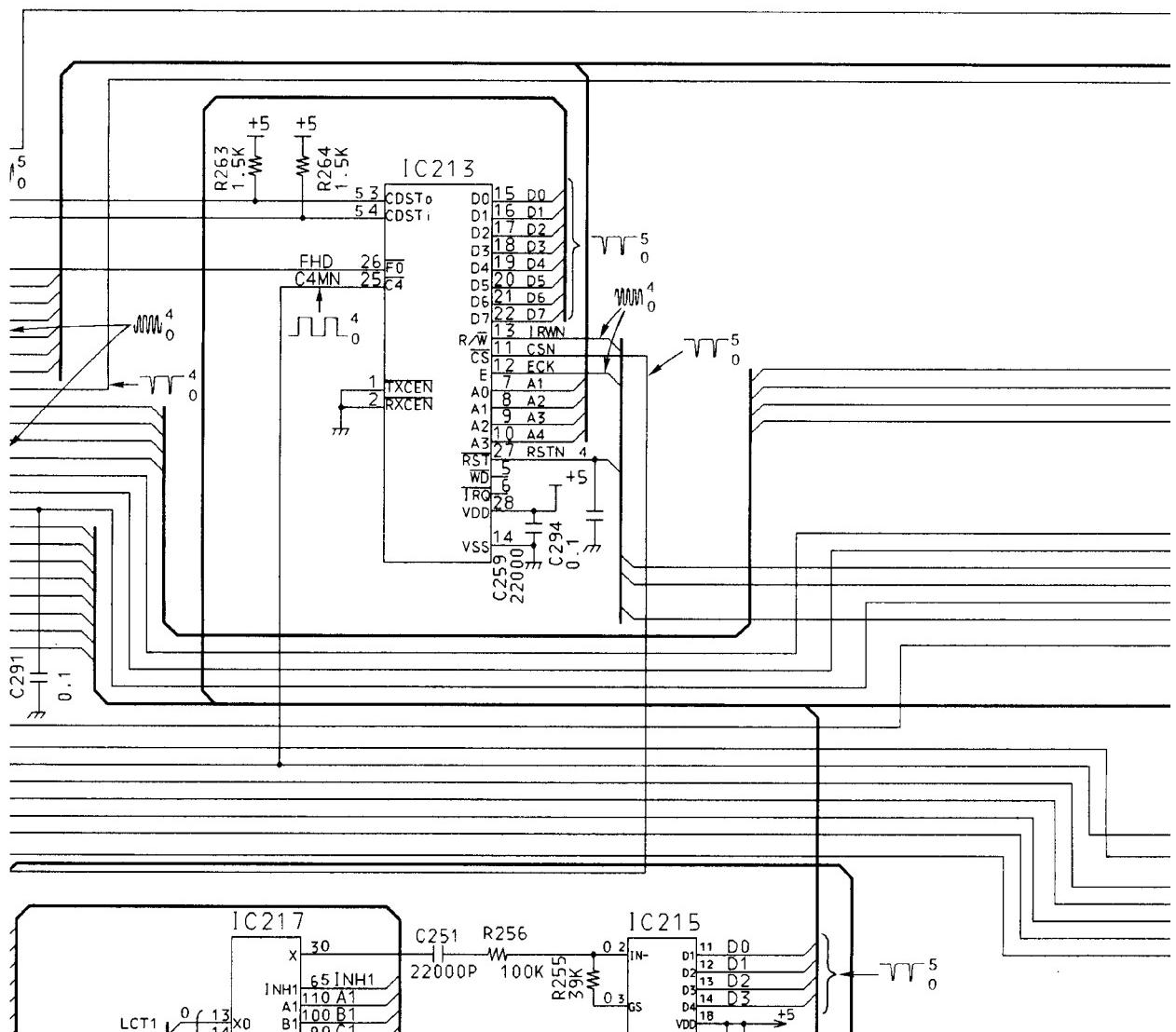
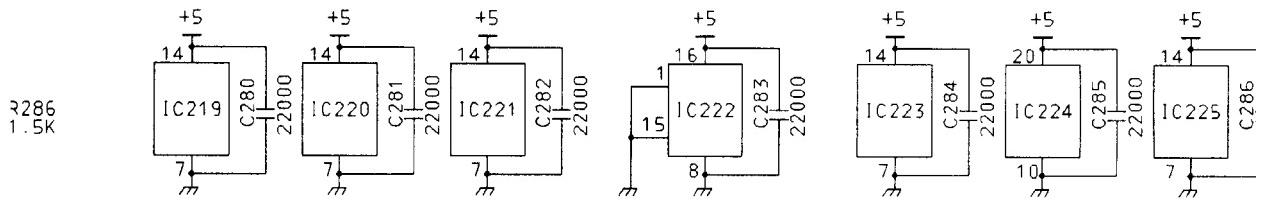
2. EXPLANATION OF CIRCUIT OPERATION

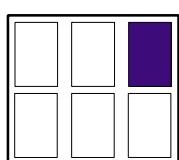
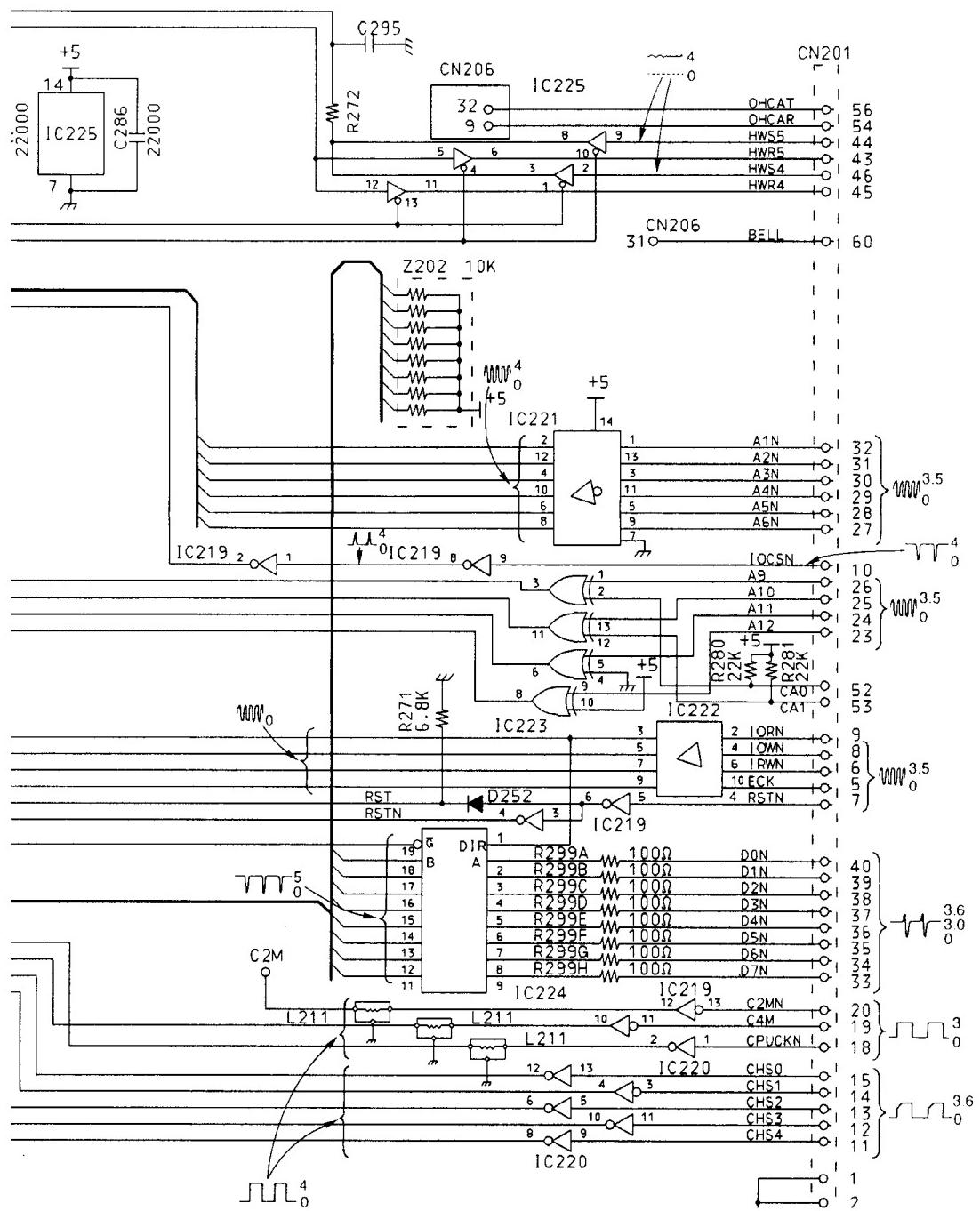
The circuit on this card has the following differences from the BASIC EXT CARD. Others are the same as the basic one.

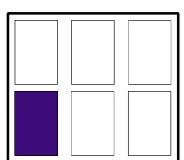
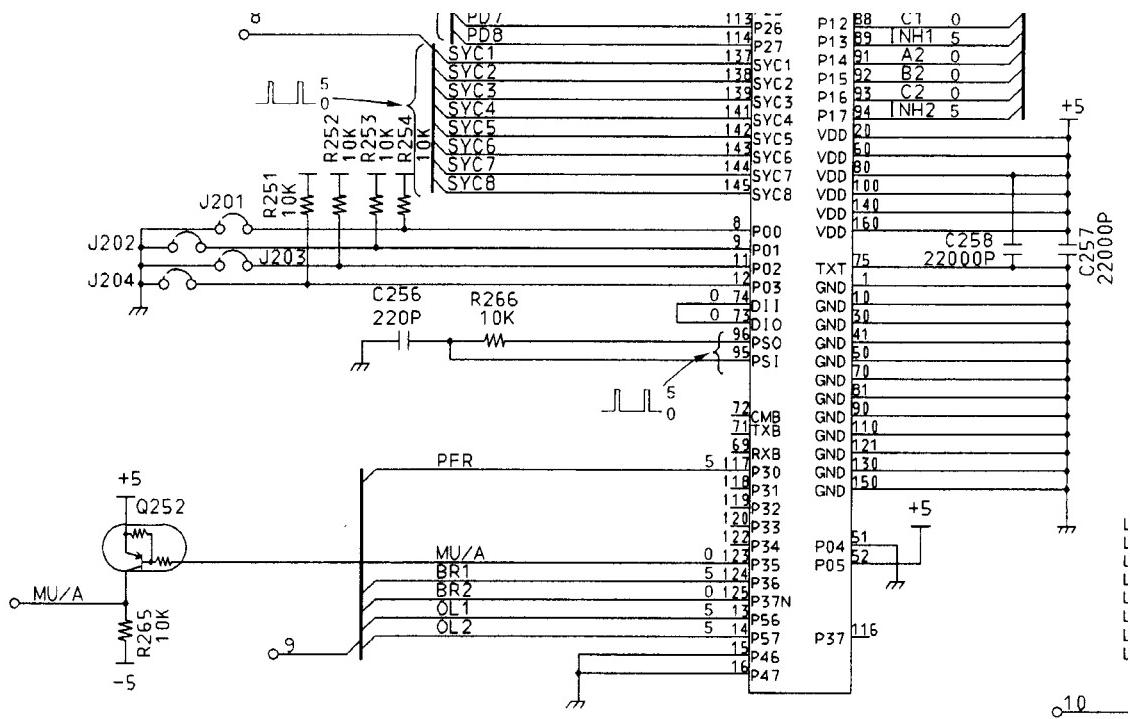
- No diagnostic circuit for CO CARD
- Two lines paths for the transfer at power failure

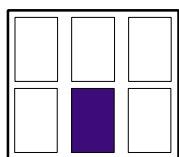
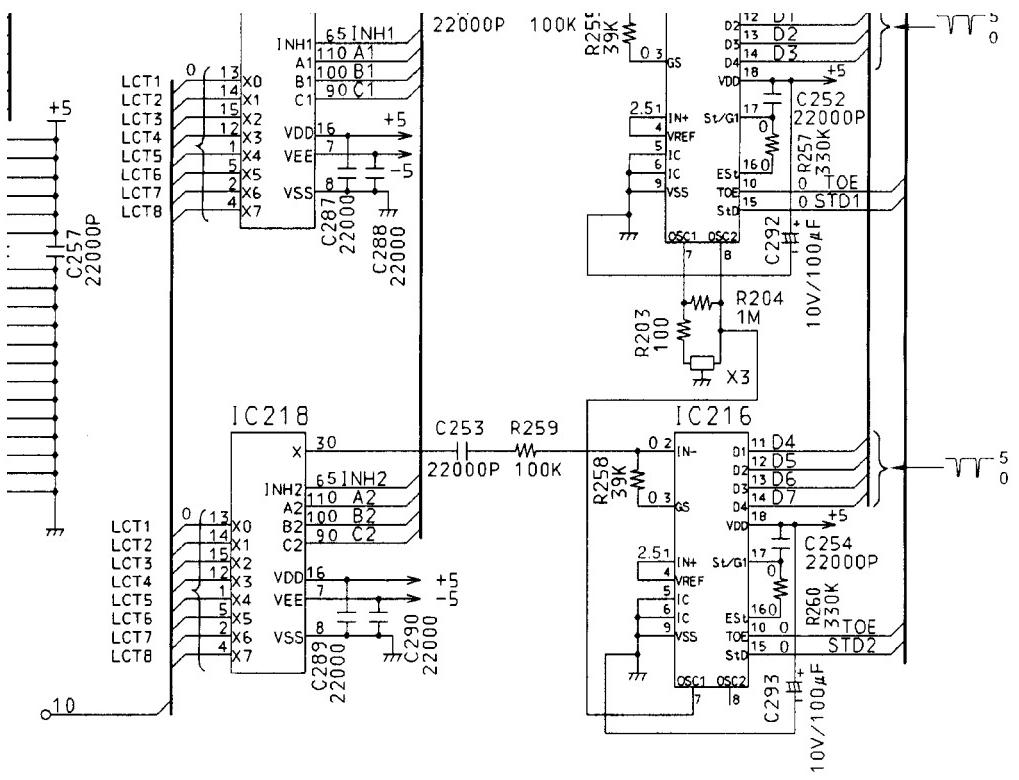
Refer to the Service Manual for KX-TD1232C as for the details of BASIC EXT. BOARD.

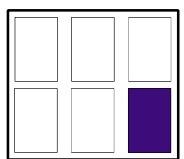
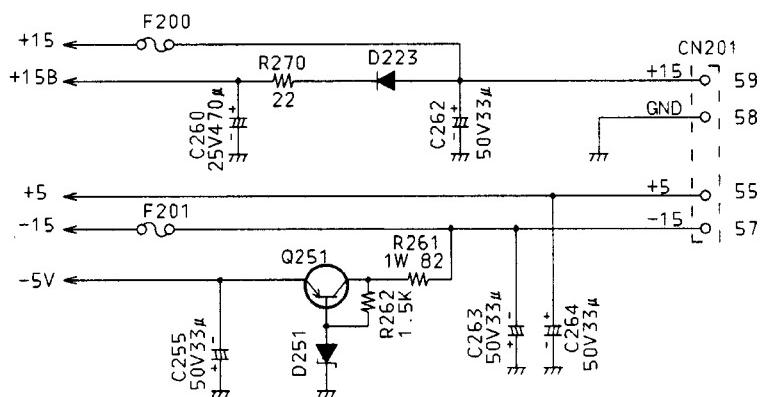
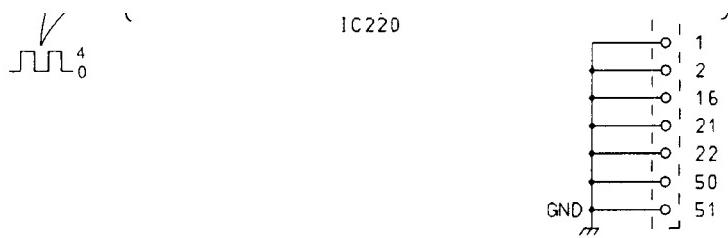


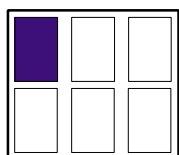
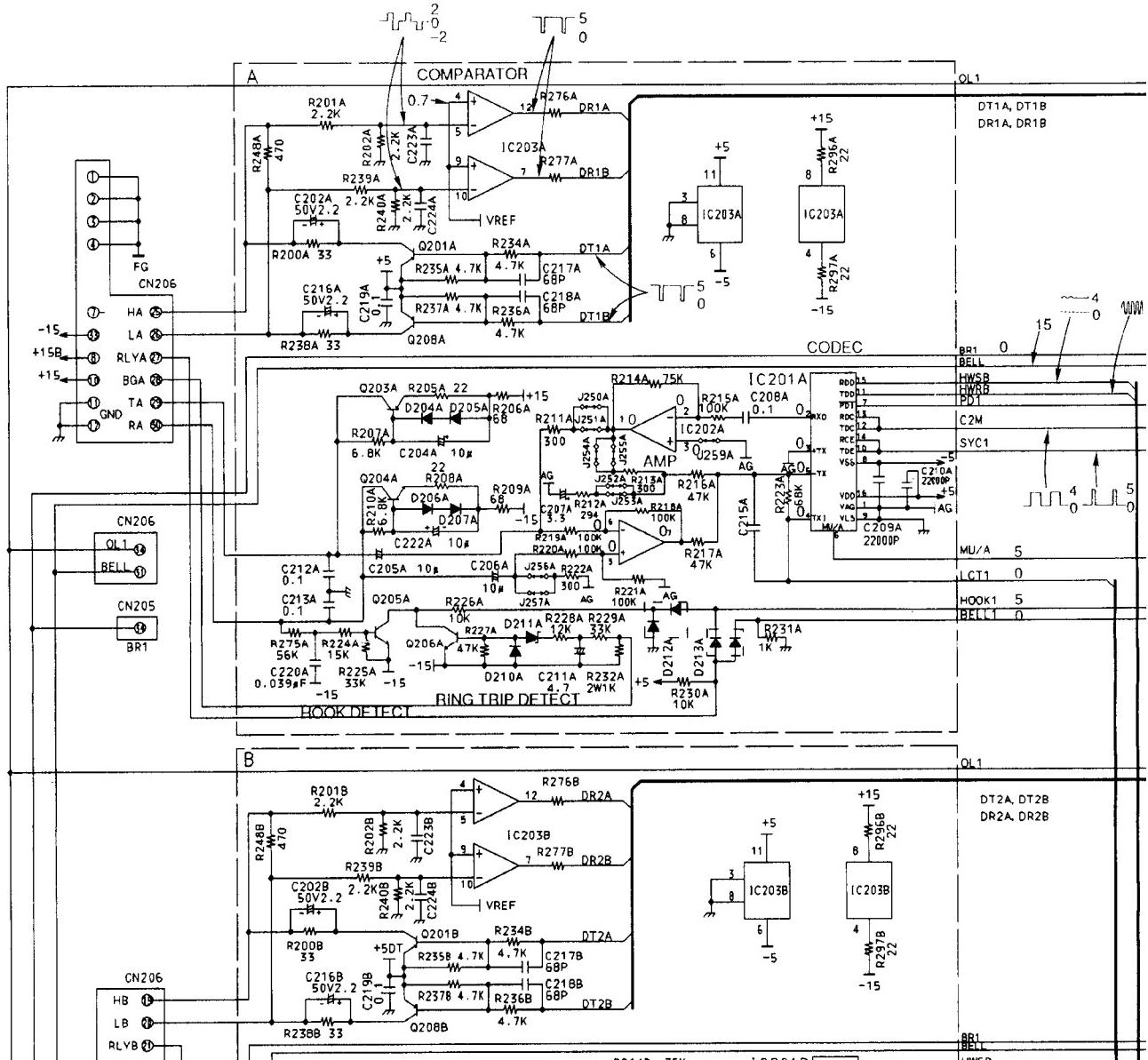


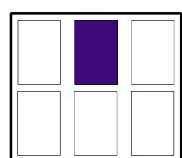
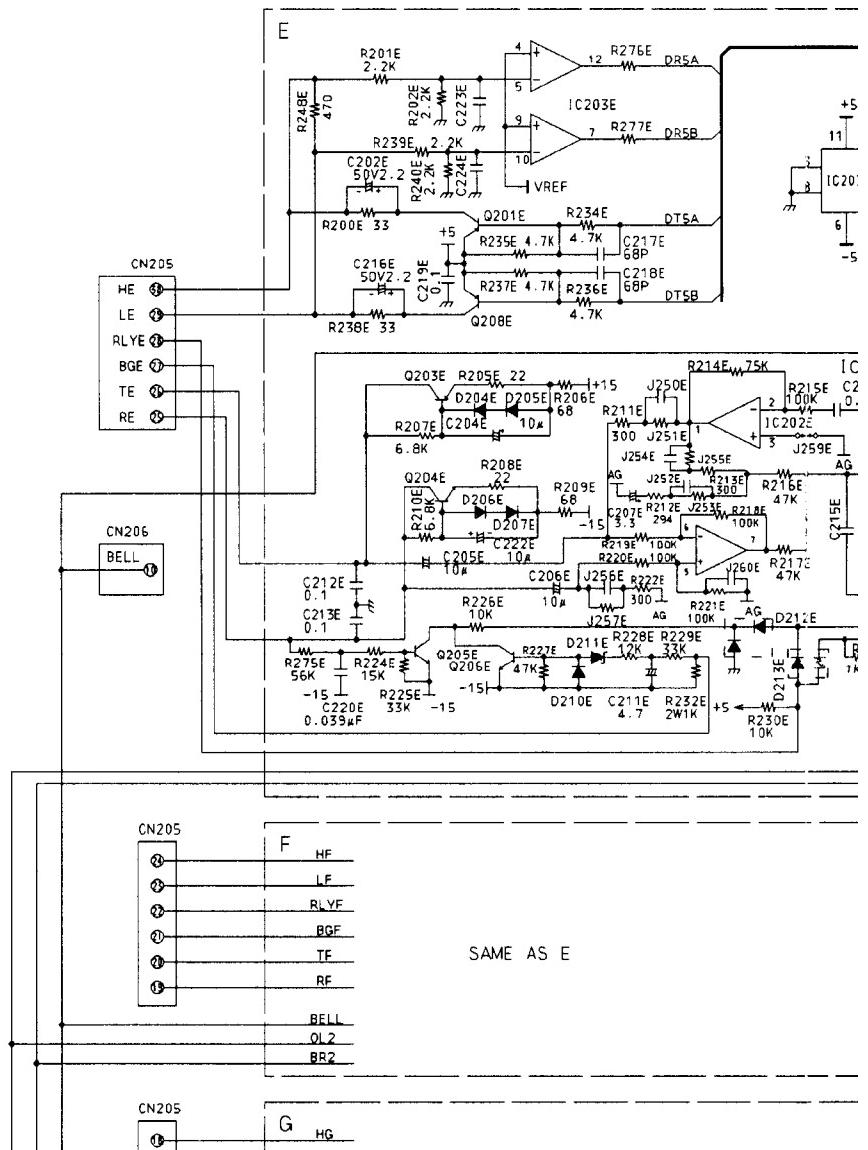
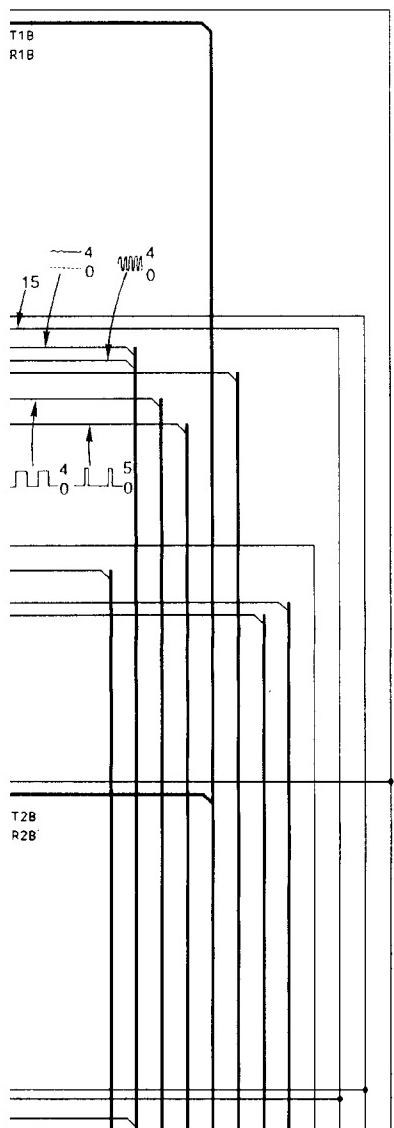


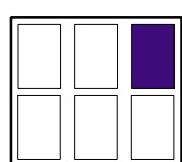
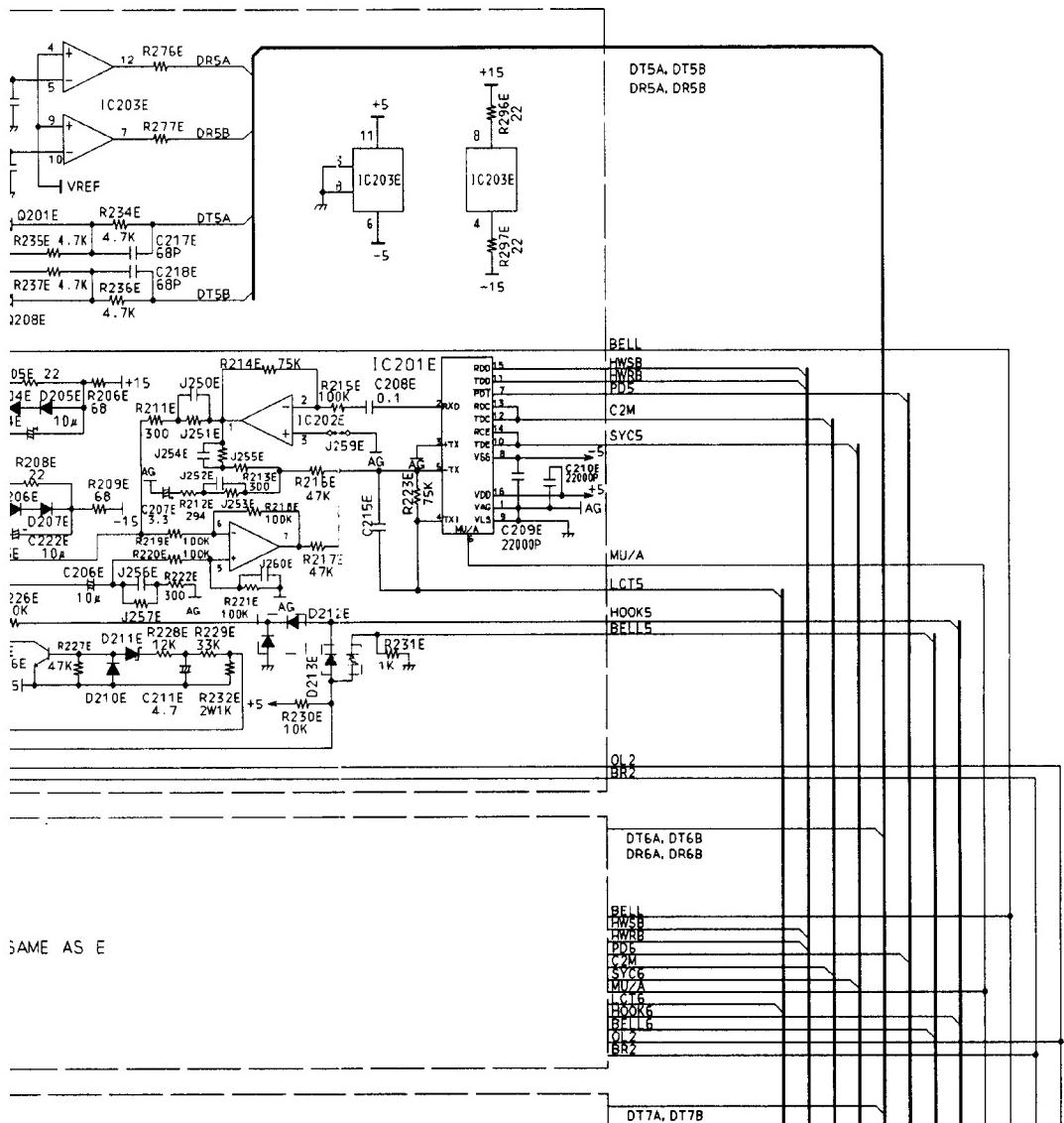


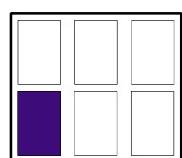
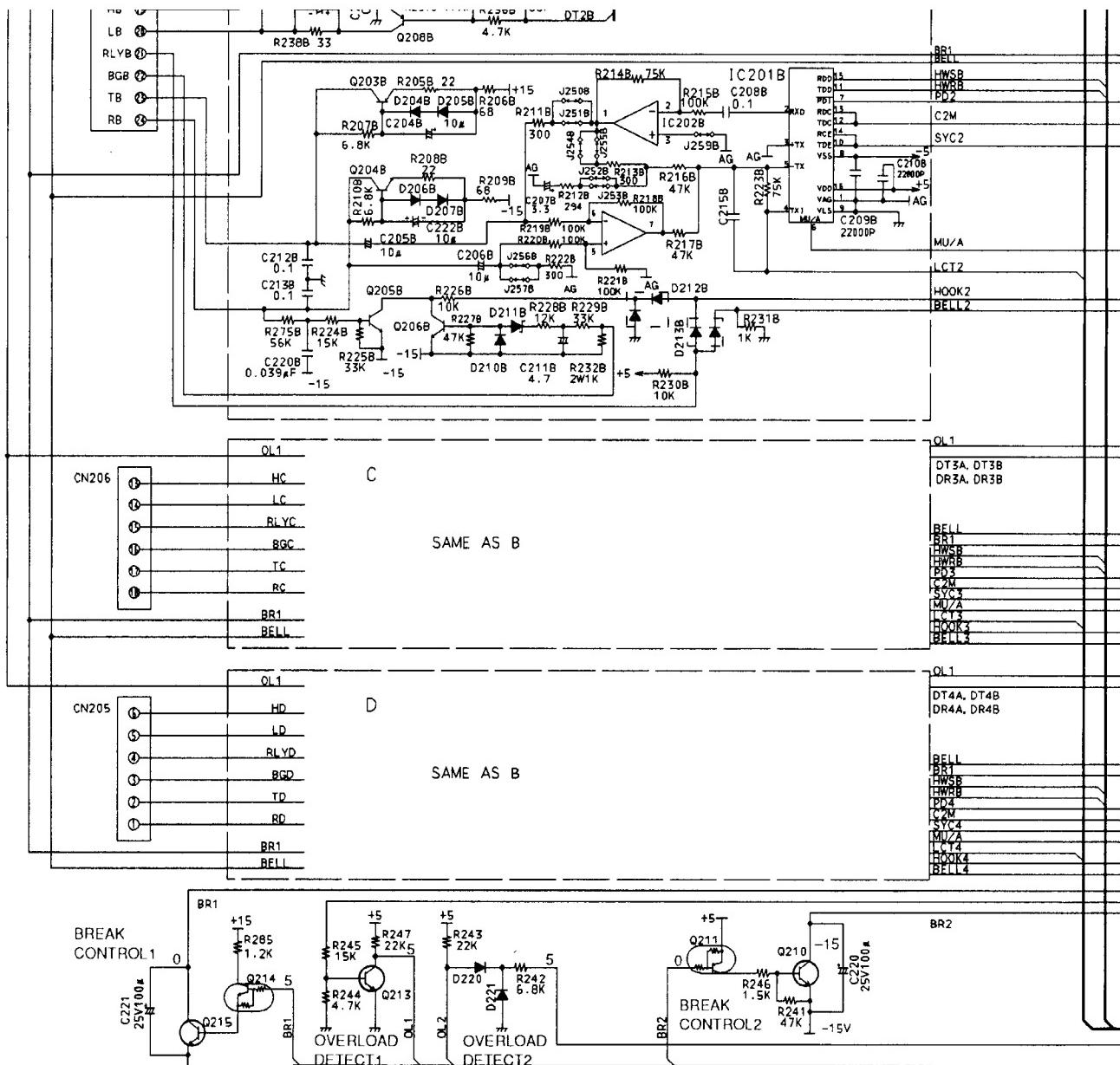


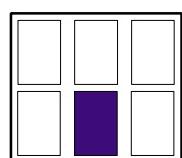
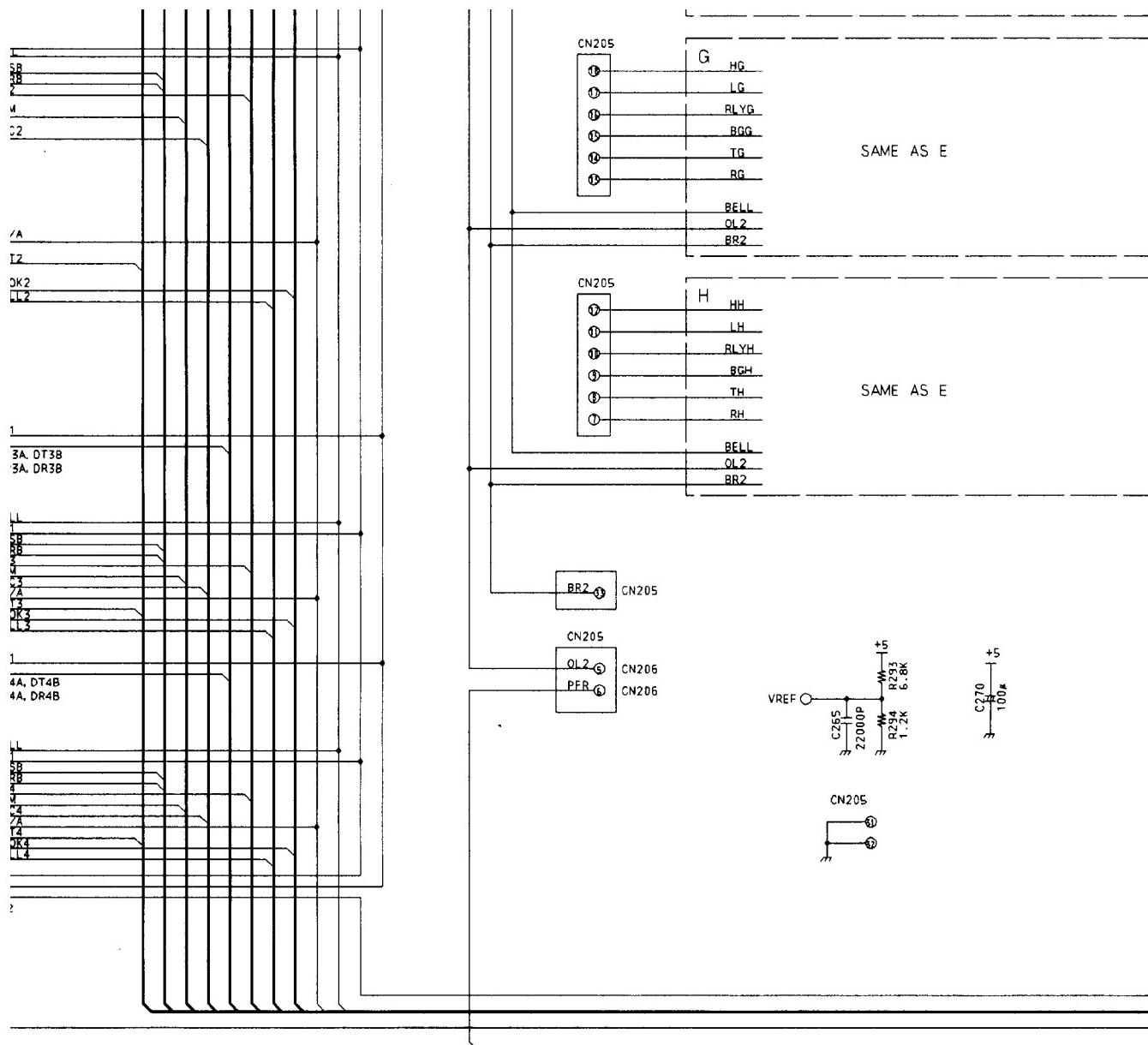


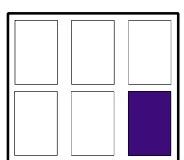
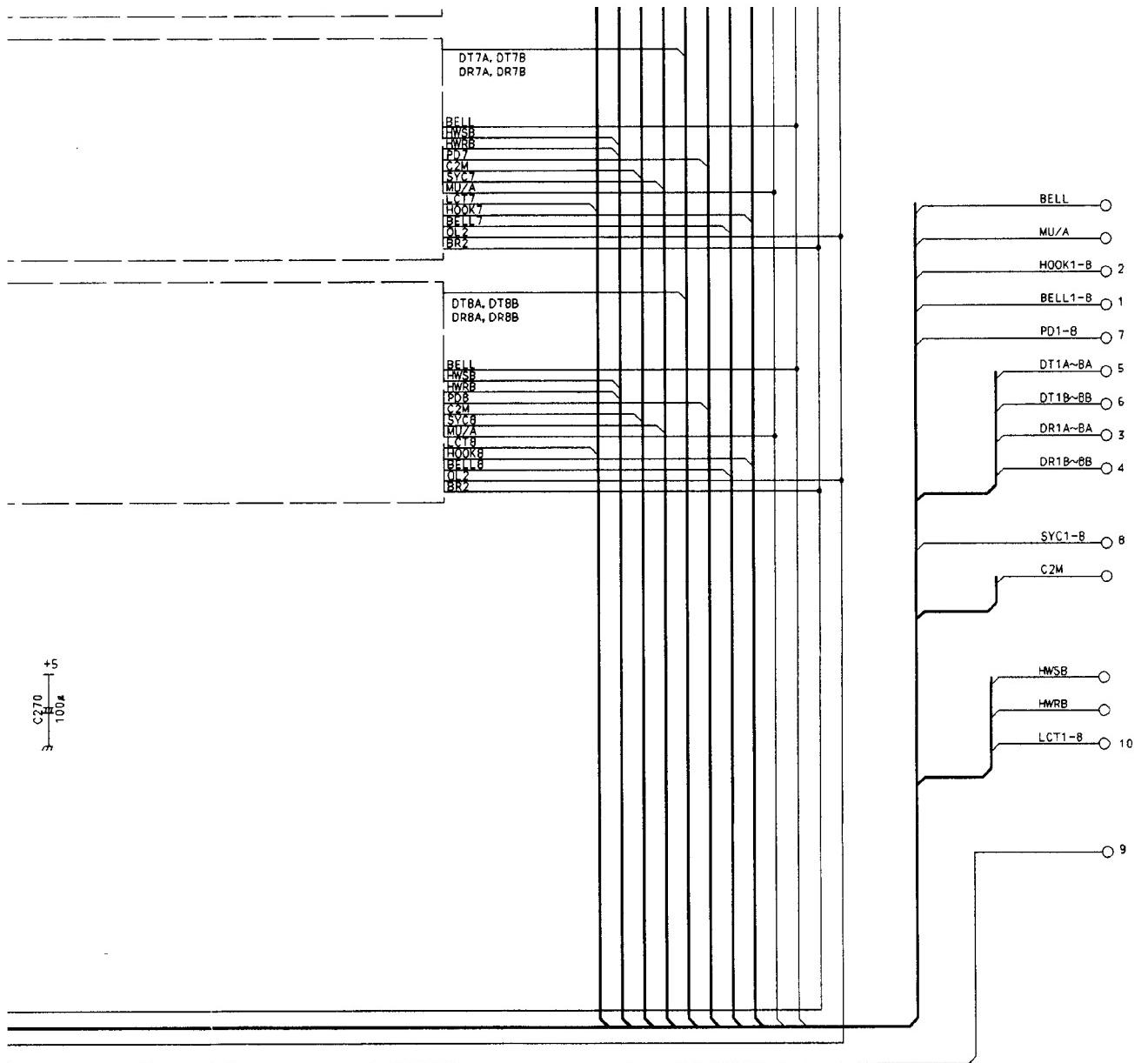


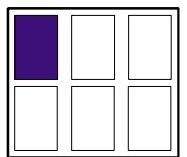
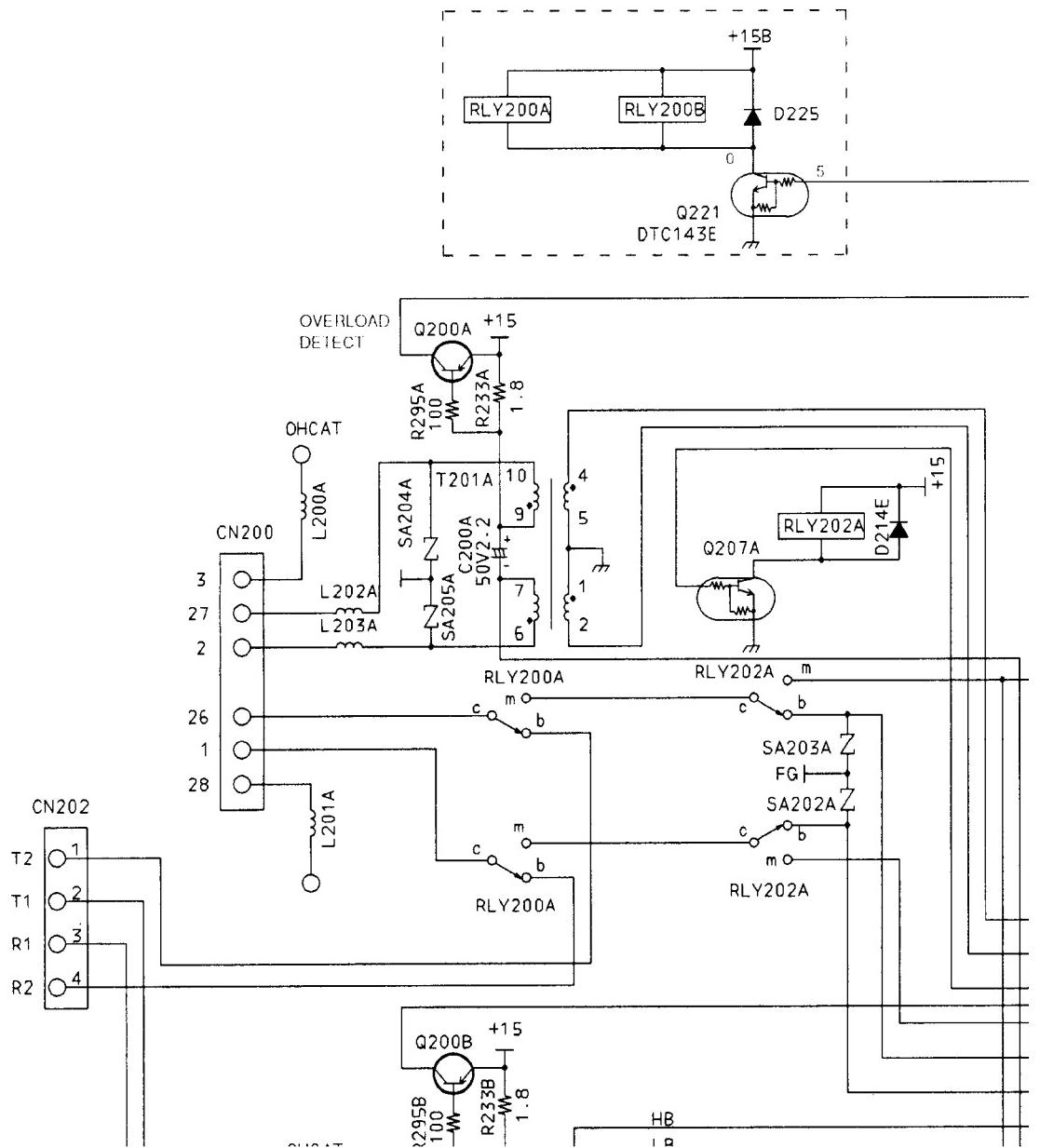


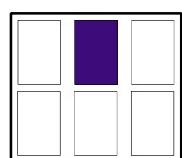
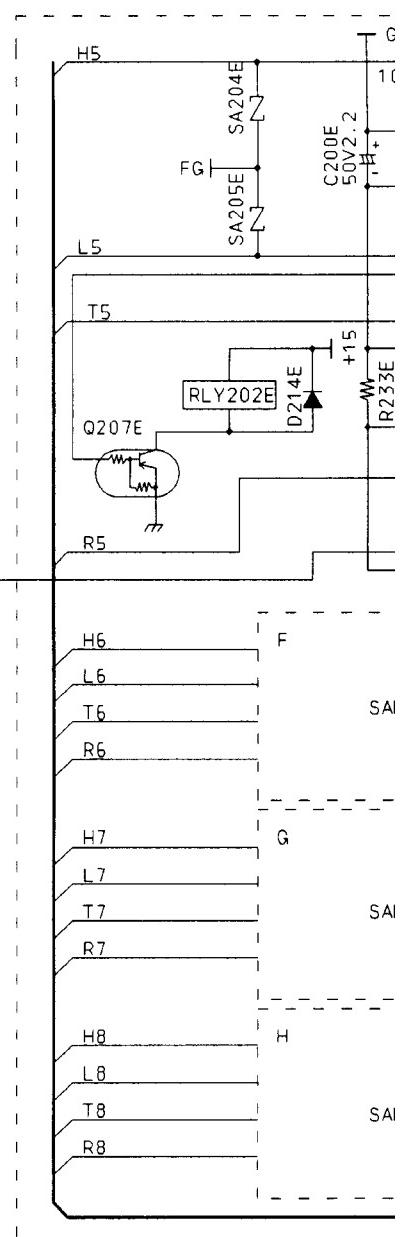
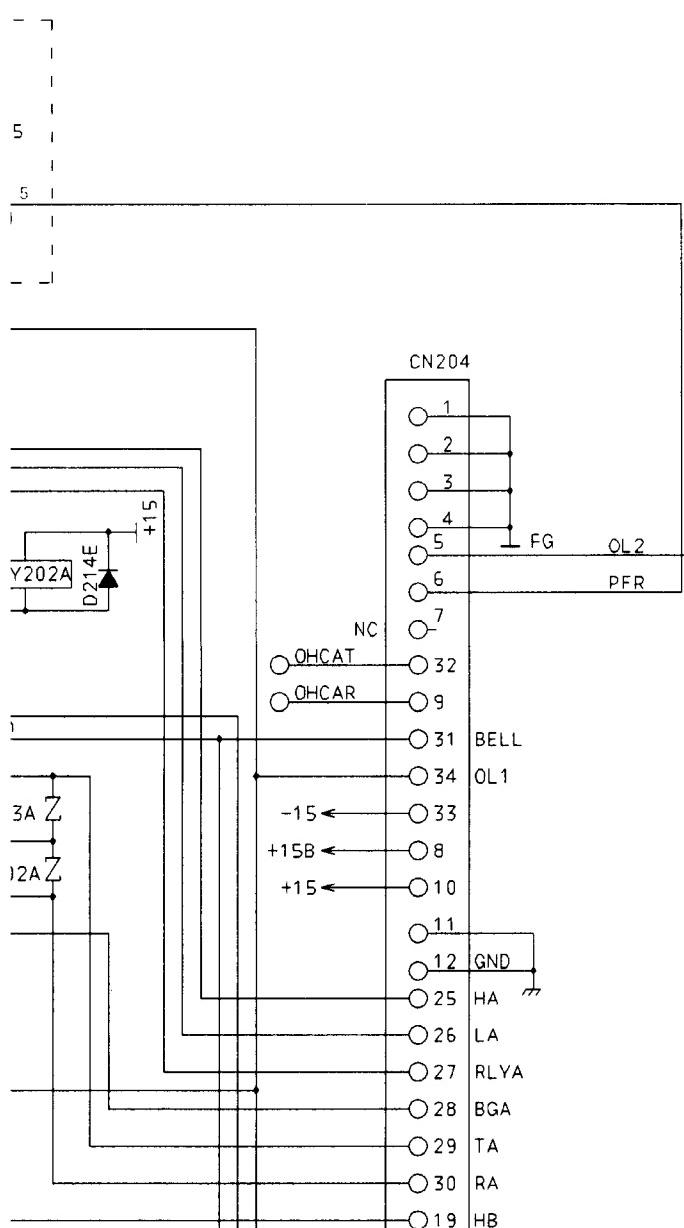


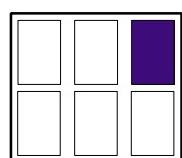
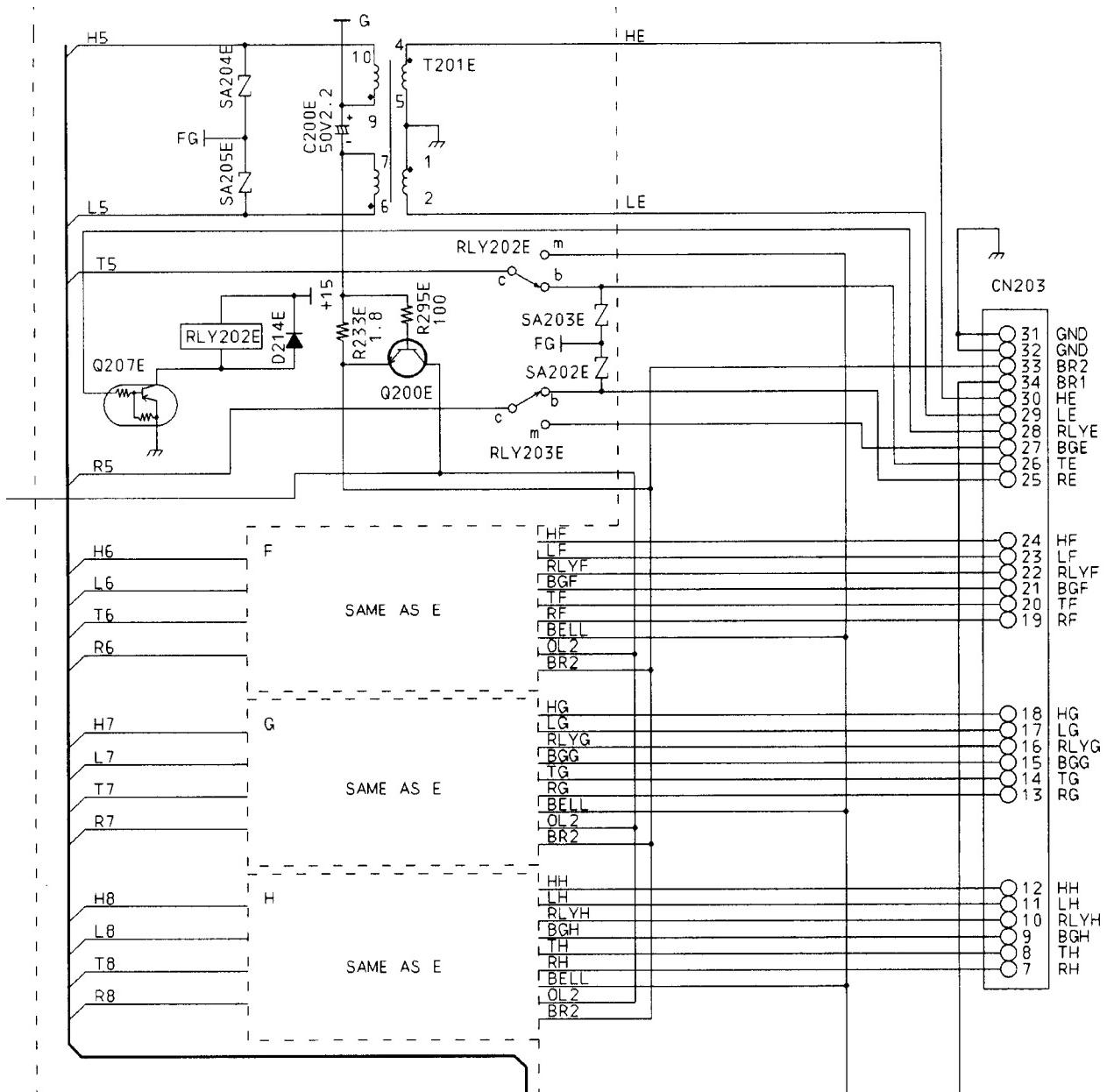


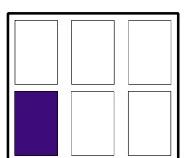
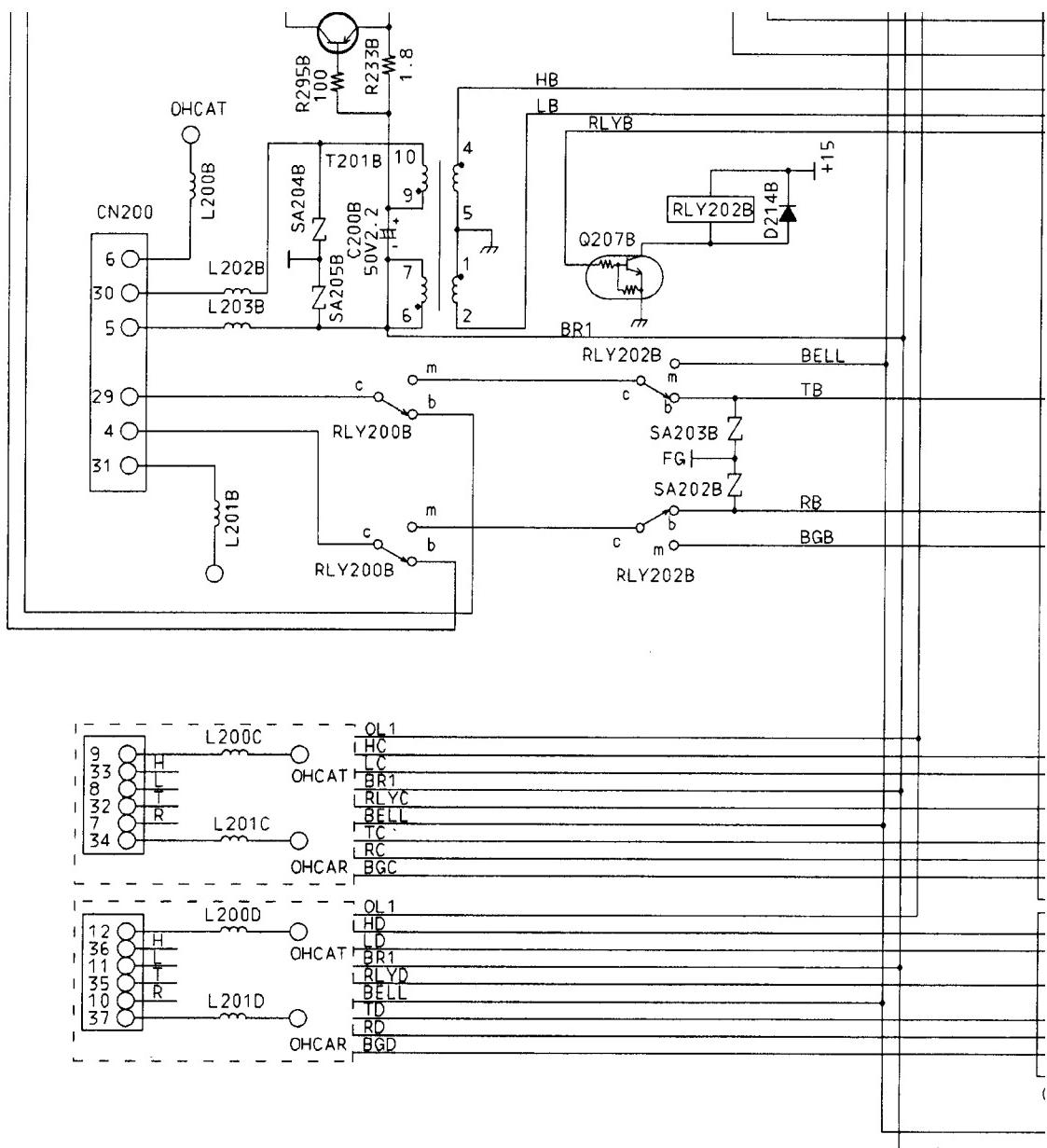


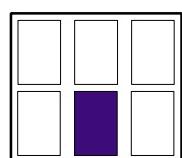
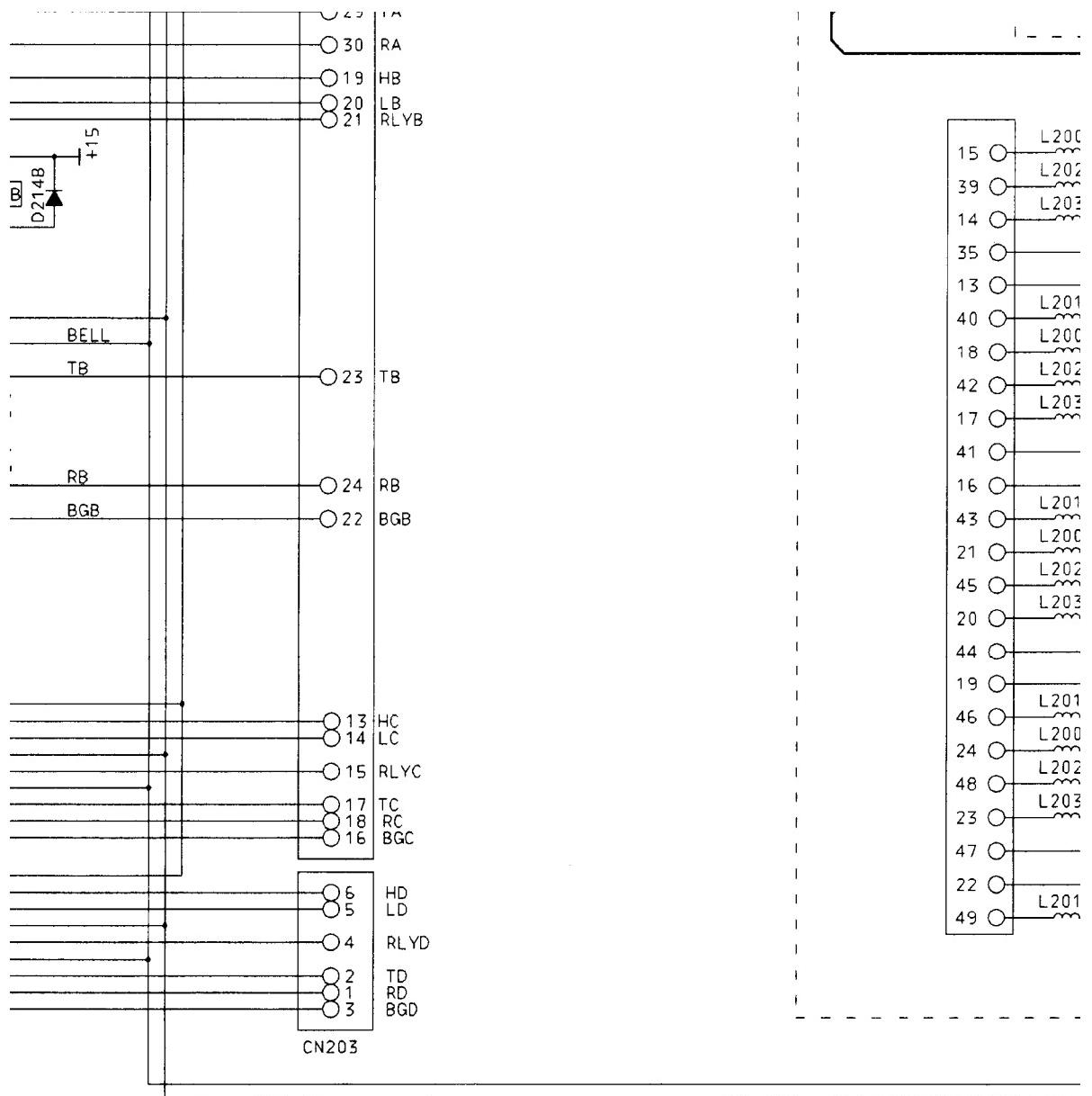


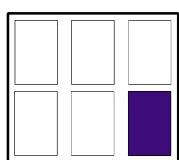
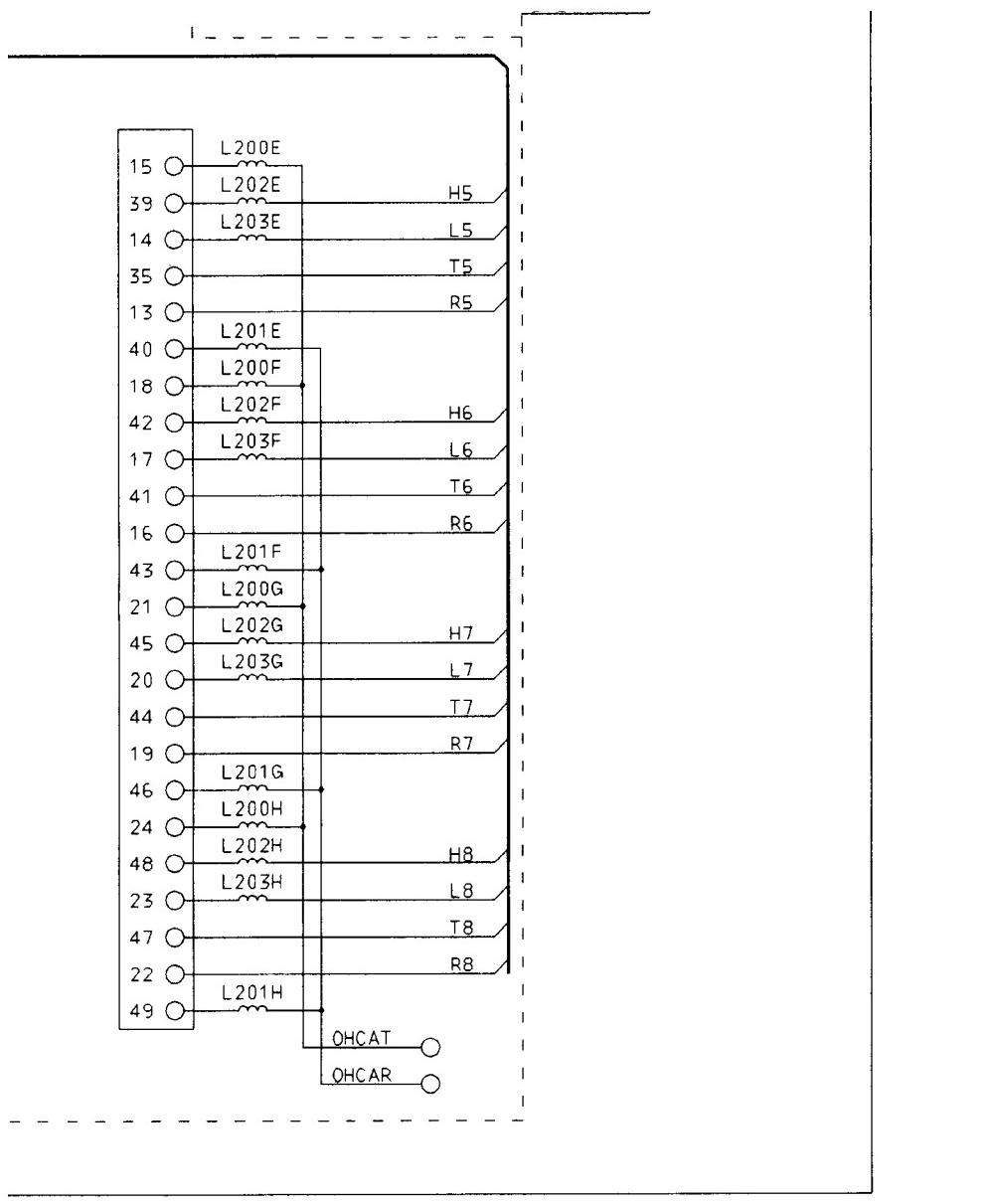




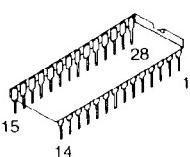
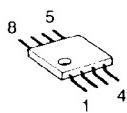
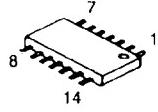
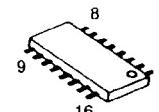
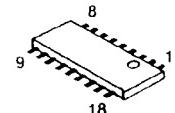
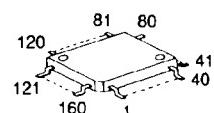
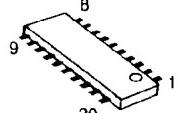
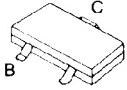
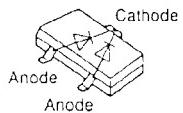
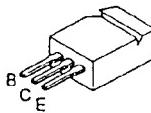
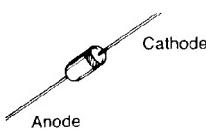
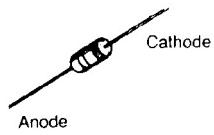
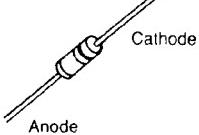




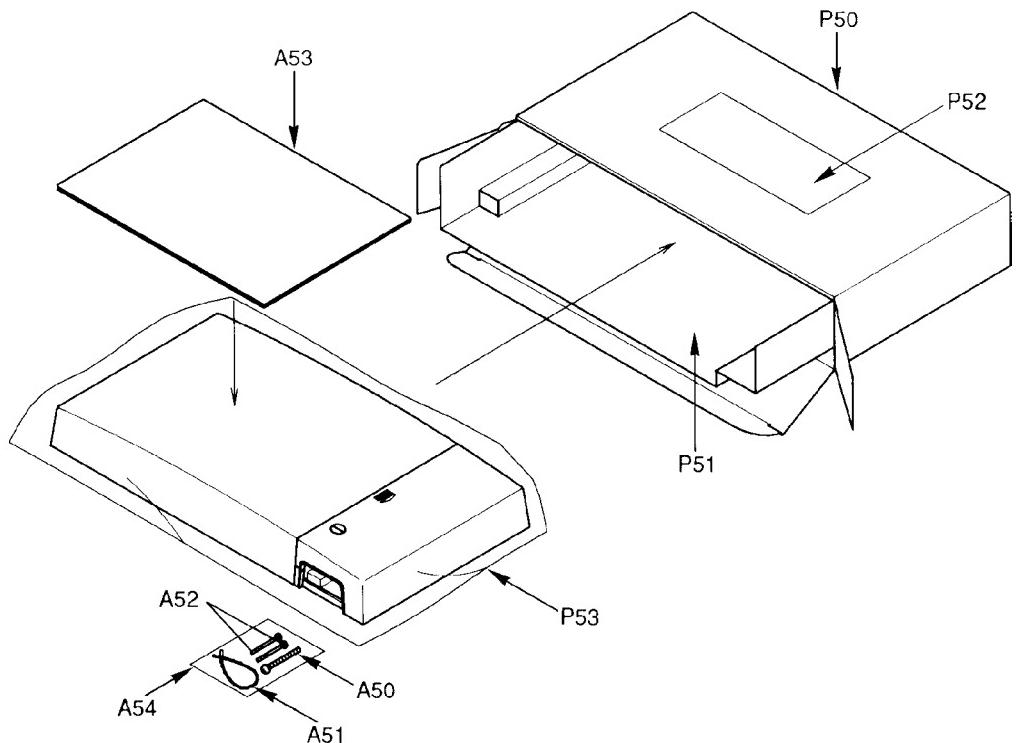




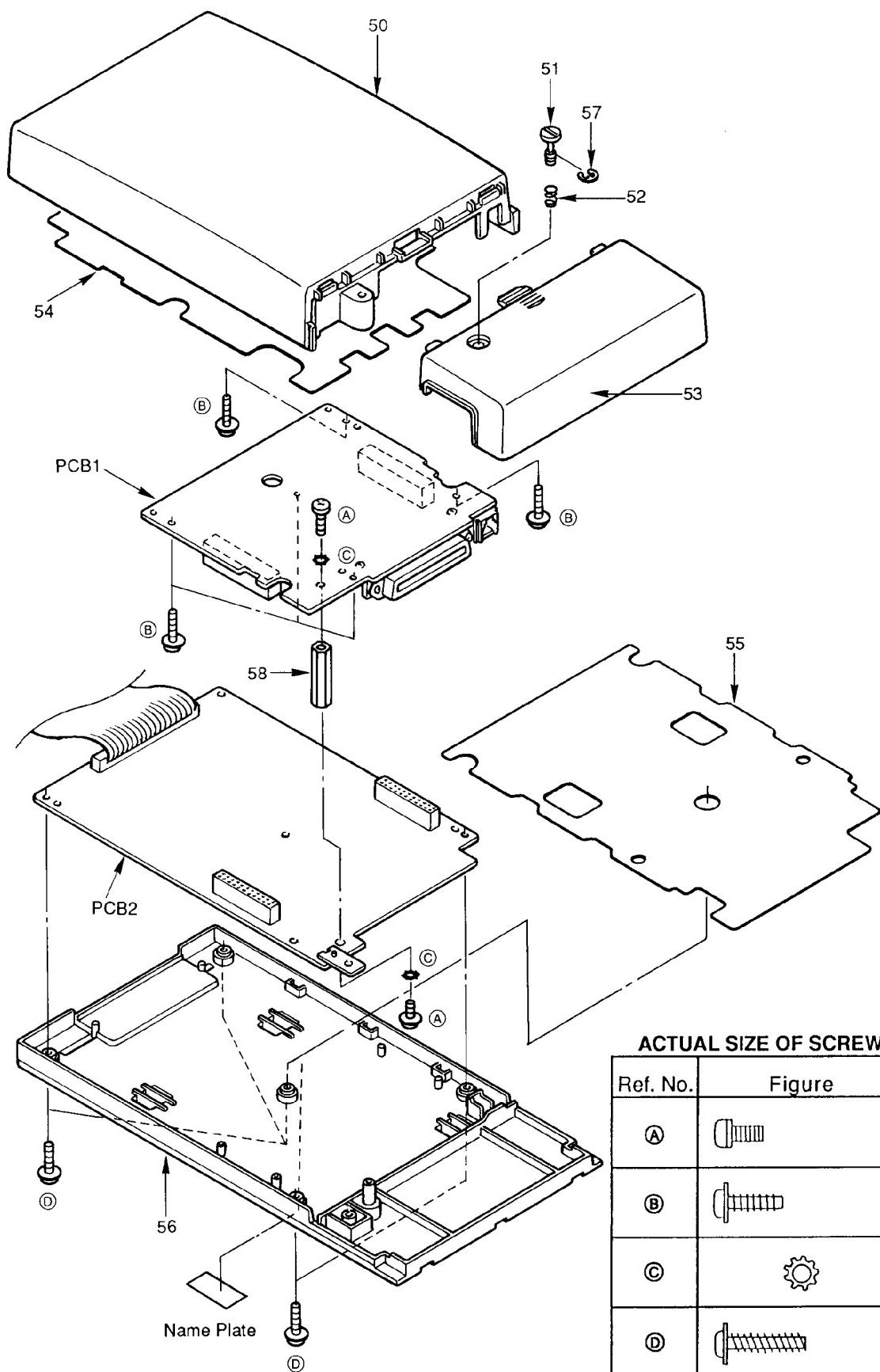
TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES

 PQVIMT8952BE	 PQVINJM4558M	 PQVISN7L125S PQVINJM319V PQVISN7L86S PQVISN7L14S	 PQVISN7L365S PQVIMC4051BF PQVIMC45503W	 PQVICM8870FI
 PQVI4603830F	 PQVISN7L640M	 2SD1819A PQVTDTC143E UN5113 UN5213	 2SD1994A 2SB1322 2SB1218A	 MA151WK
 2SD2137	 1SS131, 1SS181	 MA4039 MA4056	 RLS71	

ACCESSORIES AND PACKING MATERIALS



CABINET AND ELECTRICAL PARTS LOCATION



ACTUAL SIZE OF SCREWS

Ref. No.	Figure	Part No.
Ⓐ		XYN3+C6
Ⓑ		XTW3+S10P
Ⓒ		XWC3B
Ⓓ		XTW3+S14P

This replacement parts list is for CANADA version only.

Refer to the simplified manual (cover) for other areas.

REPLACEMENT PARTS LIST			Ref. No.	Part No.	Value, Part Name & Description	Pcs
<u>Model KX-TD170C</u>						
Notes:						
<p>1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.</p> <p>2. The S mark indicates service standard parts and may differ from production parts.</p> <p>3. RESISTORS & CAPACITORS Unless otherwise specified. All resistors are in ohms (Ω) $k=1000\Omega$, $M=1000k\Omega$ All capacitors are in MICRO FARADS(μF) $P=\mu F$</p> <p>*Type & Wattage of Resistor Type</p>						
ERC:Solid ERD:Carbon PO4R:Chip	ERX:Metal Film ERG:Metal Oxide ERO:Metal Film	PQRD:Carbon PQRQ:Fuse ERF:Wire Wound				
Wattage						
10,16,18:1/8W	14,25,S2:1/4W	12,50,S1:1/2W	1:1W	2:2W	5.5W	
*Type & Voltage of Capacitor Type						
ECFD:Semi-Conductor ECQS:Styrol POCBX,ECUV:Chip ECMS:Mica	ECCD,ECKD,PQCB,C,PQVP : Ceramic ECOM,ECQV,ECQE,ECQU,ECQB : Polyester ECEA,ECSZ,ECOS : Electrolytic ECOP : Polypropylene					
Voltage						
ECQ Type	ECQG ECQV Type	ECSZ Type	Others			
1H: 50V 2A:100V 2E:250V 2H:500V	05: 50V 1:100V 2:200V	OF:3.15V 1A:10V 1V:35V OJ:6.3V	OJ :6.3V 1A :10V 1C :16V 1E,25:25V	1V :35V 50,1H:50V 1J :63V 2A :100V		
CABINET & ELECTRICAL PARTS						
50	PQKM10029Z1	CABINET BODY	1	D204A-H	RLS71	(DIODES)
51	PQHD10011Z	SCREW	1	D205A-H	HLS71	DIODE(SI)
52	PQUS141Z	SPRING	1	D206A-H	RLS71	DIODE(SI)
53	PQKV10007Z1	COVER	1	D207A-H	RLS71	DIODE(SI)
54	PQMC10065Z	SHIELD SHEET	1	D208	Not Used	
55	PQMC10066Z	SHIELD SHEET	1	D209	Not Used	
56	PQKF10026Z1	CABINET PLATE	1	D210A-H	RLS71	DIODE(SI)
57	XUC3VW	RETAINING RING	1	D211A-H	MA4039	DIODE(SI)
58	PQHE10035Z	SPACER	1	D212A-H	MA151WK	DIODE(SI)
				D213A-H	ISS181	DIODE(SI)
				D220	RLS71	DIODE(SI)
				D221	RLS71	DIODE(SI)
				D222	Not Used	
				D223	ISS131	DIODE(SI)
ACCESSORIES AND PACKING MATERIALS						
A50	XYN4+C35FN	SCREW WITH WASHER	1	D251	MA4056	(RESISTORS)
A51	PCHR133Z	BAND	1	D252	RLS71	DIODE(SI)
A52	XSN4X40+28FY	SCREW	2	R200A-H	PQ4R10XJ330	33
A53	PQOX10195Z	INSTRUCTION BOOK	1	R201A-H	PQ4R10XJ222	2.2K
A54	XZB05X08A03	PROTECTION COVER (FOR ACCESSORY)	1	R202A-H	PQ4R10XJ222	2.2K
P50	PQPK10118Z	GIFT BOX	1	R203	PQ4R10XJ101	100
P51	PQPD10027Z	CUSHION	1	R204	PQ4R10XJ105	1M
P52	PQQA10158Z	LABEL, MODEL NO.	1	R205A-H	ERDS2TJ220	22
P53	XZB26X45A04	PROTECTION COVER (FOR SET)	1	R206A-H	ERDS2TJ680	68
				R207A-H	PQ4R10XJ682	6.8K

This replacement parts list is for CANADA version only.

Refer to the simplified manual (cover) for other areas.

Ref. No.	Part No.	Value	Pcs	Ref. No.	Part No.	Value	Pcs
R208A-H	ERDS2TJ220	22	8	R293	PQ4R10XF9101	9.1K	1
R209A-H	ERDS2TJ680	68	S 8	R294	PQ4R10XF1301	1.3K	1
R210A-H	PQ4R10XJ682	6.8K		R295	Not Used		
R211A-H	PQ4R10XF3000	300	S 8	R296A-H	PQ4R10XJ220	22	8
R212A-H	PQ4R10XF2940	294		H297A-H	PQ4R10XJ220	22	8
R213	PQ4R10XF3000	300		R298	Not Used		
R214A-H	PQ4R10XF7502	75K	S 8	R299A-H	PQ4R10XJ101	100	8
R215A-H	PQ4R10XF1003	100K					
R216A-H	PQ4R10XF4702	47K					
R217A-H	PQ4R10XF4702	47K					
R218A-H	PQ4R10XF1003	100K		C202A-H	ECEA1HKS2R2	2.2 (CAPACITORS)	8
R219A-H	PQ4R10XF1003	100K		C203	Not Used		
R220A-H	PQ4R10XF1003	100K	S 8	C204A-H	ECEA1HKS100	10	8
R221A-H	PQ4R10XF1003	100K		C205A-H	ECEA1EN100S	10	8
R222A-H	PQ4R10XF3000	300		C206A-H	ECEA1EN100S	10	8
R223A-H	PQ4R10XF7502	75K		C207A-H	ECEA1HKS3R3	3.3	8
R224A-H	PQ4R10XJ153	15K		C208A-H	ECUV1H104MD	0.1	S 8
R225A-H	PQ4R10XJ333	33K		C209A-H	PQCUV1H223KB	0.022	S 8
R226A-H	PQ4R10XJ103	10K		C210A-H	PQCUV1H223KB	0.022	S 8
R227A-H	PQ4R10XJ473	47K		C211A-H	ECEA1HN4R7S	4.7	8
R228A-H	PQ4R10XJ123	12K		C212A-H	PQCUV1H104ZF	0.1	8
R229A-H	PQ4R10XJ333	33K		C213A-II	PQCUV1H104ZF	0.1	8
R230A-H	PQ4R10XJ103	10K		C214	Not Used		
R231A-H	PQ4R10XJ102	1K		C215	Not Used		
R232A-H	PQRD2TJ102	1K		C216A-H	ECEA1HKS2R2	2.2	8
R233	Not Used			C217A-H	PQCUV1H680JC	68P	8
R234A-H	PQ4R10XJ472	4.7K		C218A-H	PQCUV1H680JC	68P	8
R235A-H	PQ4R10XJ472	4.7K		C219A-H	ECUV1H104MD	0.1	S 8
R236A-H	PQ4R10XJ472	4.7K		C220A-H	ECUV1H393KB	0.039	8
R237A-H	PQ4R10XJ472	4.7K		C221	ECEA1EU101	100	1
R238A-H	PQ4R10XJ330	33		C222A-H	ECEA1HKS100	10	8
R239A-H	PQ4R10XJ222	2.2K		C251	PQCUV1H223KB	0.022	S 1
R240A-H	PQ4R10XJ222	2.2K		C252	PQCUV1H223KB	0.022	S 1
R241	ERDS2TJ473	47K		C253	PQCUV1H223KB	0.022	S 1
R242	PQ4R10XJ682	6.8K		C254	PQCUV1H223KB	0.022	S 1
R243	PQ4R10XJ223	22K		C255	ECEA1HU330	33	1
R244	PQ4R10XJ472	4.7K		C256	PQCUV1H221JC	220P	1
R245	PQ4R10XJ153	15K		C257	PQCUV1H223KB	0.022	S 1
R246	ERDS2TJ152	1.5K		C258	PQCUV1H223KB	0.022	S 1
R247	PQ4R10XJ223	22K		C259	PQCUV1H223KB	0.022	S 1
R248A-H	PQ4R10XJ821	820		C260	ECEA1EU471	470	1
R249	Not Used			C261	Not Used		
R250	Not Used			C262	ECEA1HU330	33	1
R251	PQ4R10XJ103	10K		C263	ECEA1HU330	33	1
R252	PQ4R10XJ103	1CK		C264	ECEA1HU330	33	1
R253	PQ4R10XJ103	10K		C265	PQCUV1H223KB	0.022	S 1
R254	PQ4R10XJ103	10K		C266	Not Used		
R255	PQ4R10XJ393	39K		C269			
R256	PQ4R10XJ104	100K		C270	ECEA1CKS101	100	1
R257	PQ4R10XJ334	330K		C280	PQCUV1H223ZF	0.022	9
R258	PQ4R10XJ393	39K		C288			
R259	PQ4R10XJ104	100K	S 1	C289	PQCUV1H223KB	0.022	S 1
R260	PQ4R10XJ334	330K		C290	PQCUV1H223KB	0.022	S 1
R261	PQRD1TJ820	82		C291	PQCUV1H104ZF	0.1	1
R262	ERDS2TJ152	1.5K		C292	ECEA1AU101	100	1
R263	PQ4R10XJ102	1K		C293	FCFA1AU101	100	1
R264	PQ4R10XJ102	1K		C294	PQCUV1H104ZF	0.1	1
R265	PQ4R10XJ103	10K					
R266	PQ4R10XJ103	10K					
R267	Not Used						
R268				L210	POVFTU50M1	CERAMIC FILTER	1
R270	ERDS2TJ220	22		L211	POVFTU50MT	CERAMIC FILTER	1
R271	PQ4R10XJ682	6.8K		L212	POVFTU50MT	CERAMIC FILTER	1
R272	PQ4R10XJ101	100					
R275A-H	PQ4R10XJ563	56K	S 8	X201	PQVBFC3584A1	(CRYSTAL OSCILLATOR)	1
R276	PQ4R10XJ470	47					
R277	PQ4R10XJ470	47					
R278A-H	PQ4R10XJ560	56					
R279A-H	PQ4R10XJ560	56					
R280	PQ4R10XJ223	22K					
R281	PQ4R10XJ223	22K		Z200	PQRSLD8X472J	(COMPONENTS COMBINATIONS)	1
R282	Not Used			Z201	PQRSLD8X472J	COMPONENTS COMBINATION	1
R284				Z202	PQRSLD8X472J	COMPONENTS COMBINATION	1
R285	PQ4R10XJ222	2.2K	1	Z203	PQRSLD8X472J	COMPONENTS COMBINATION	1
R286	PQ4R10XJ102	1K	1				

This replacement parts list is for CANADA version only.

Refer to the simplified manual (cover) for other areas.

Ref. No.	Part No.	Value, Part Name & Description	Pcs
CN201	PQJS60R96Z	(CONNECTORS) CONNECTOR, 60P	1
CN205	PQJS34X33Y	CONNECTOR, 34P	1
CN206	PQJS34X33Y	CONNECTOR, 34P	1
F200	POBA1N15NMAL	(FUSES) FUSE	1
F201	PQBA1N15NMAL	FUSE	1
SUB BOARD PARTS			
PCB2	PQWP2TD170C	SUB BOARD ASS'Y	1
Q200A-D	2SB1218A	(TRANSISTORS) TRANSISTOR(SI)	4
Q200E-H	2SD1819A	TRANSISTOR(SI)	4
Q207A-H	PQVTDTC143E	TRANSISTOR(SI)	8
Q221	PQVTDTC143E	TRANSISTOR(SI)	1
D214A-H	ISS131	(DIODES) DIODE(SI)	8
D225	ISS131	DIODE(SI)	1
C200A H	ECEA1HKS2R2	(CAPACITORS) 2.2	8
L200A-H	PQLQZM100K	(COILS) COIL	8
L201A-H	PQLQZM100K	COIL	8
L202A-H	PQLE106	COIL	8
L203A-H	PQLE106	COIL	8
R233A-H	PQ4R10XJ1R8	(RESISTORS) 1.8	8
R295A-H	PQ4R10XJ101	100	8
RY200A, RY200B	PQSL44Z	(RELAYS) RELAY	2
RY202A H	PQSL119Z	RELAY	8
T201A-H	ETE13K79AY	(TRANSFORMERS) TRANSFORMER	8
ZR202A-H	PQVDNV039D03	(VARISTORS) VARISTOR	8
ZR203A-H	PQVDNV039D03	VARISTOR	8
ZR204A-H	PQVDNV039D03	VARISTOR	8
ZR205A H	PQVDNV039D03	VARISTOR	8
CN200	PQJS50Q30Y	(CONNECTORS) JACK/SOCKET	1
CN201	Not Used		
CN202	PQJJ1TB26Z	JACK/SOCKET	1
CN203	PQJP34D30Y	CONNECTOR, 34P	1
CN204	PQJP34D30Y	CONNECTOR, 34P	1